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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/018,588	UEDA ET AL.	
	Examiner	Art Unit	
	Hung Q. Dang	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17,19-21,23,24,26 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-17,19-21,23,24,26 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/12/2001, 12/21/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 08/13/2007 have been fully considered but they are not persuasive.

At pages 17-18, regarding claim 1, Applicant argues that Jones does not teach or suggest the feature of "detecting means for detecting when each stored value in the storage means are a first value; and selecting means for selecting picture data decoded by the decoding means for which the corresponding values stored in the storage means are a second value; wherein the value stored in the storage means corresponding to the decoding means which decoded the selected picture data are changed to the first value." In response, the Examiner respectfully disagrees. In the cited sections, Jones discloses a buffer management scheme, in which three buffers are used (column 248, lines 32-60). The buffers are used to store decoded image data that are to be displayed after being decoded by and transferred from the decoding means (column 248, lines 61-65). The buffers are managed using buffer status values, which can take any of four values depending on the status of the buffer at the time (see Table C.2.1 in column 251, lines 30-40). Two of the values particularly relevant to be used for rejecting the current claims are EMPTY and READY. A buffer receives the READY value when the decoded image data stored in the buffer is ready for display (column 248, lines 61-65). A buffer receives the EMPTY value when the decoded image data stored in the buffer have been displayed and the buffer is ready to receive new decoded image data from the

decoding means (column 249, lines 3-6). Having said that, the following facts can be established:

i) The memory used to store the buffer status values tables (see Table C.2.1 in column 251, lines 30-40) corresponds to the "storage means" in the context of the claim.

ii) The decoding means together with a particular output buffer corresponds to the each "decoding means" in the context of the claim. Specifically, the decoding means together with the output buffer #1 corresponds to the first "decoding means". The decoding means together with the output buffer #2 corresponds to the second "decoding means". The decoding means together with the output buffer #3 corresponds to the third "decoding means". This interpretation is reasonable because, for it to work, each decoding means must have a corresponding output buffer to hold the decoded data.

iii) The EMPTY value corresponds to the "first value" in the context of the claim.

iv) The READY value corresponds to the "second value" in the context of the claim.

v) When all values in the "storage means" are EMPTY or first value, selecting one of the picture data from the buffer that its status value is READY or second value to display (column 248, lines 61-65).

vi) Changing the value stored in the "storage means" the picture data of which has been displayed, to EMPTY or the first value (column 249, lines 3-6) so that it can receive newly decoded image data.

For that reason, it can be concluded that Jones clearly discloses "detecting means for detecting when each stored value in the storage means are a first value; and selecting means for selecting picture data decoded by the decoding means for which

the corresponding values stored in the storage means are a second value; wherein the value stored in the storage means corresponding to the decoding means which decoded the selected picture data are changed to the first value."

The claims stand rejected as originally presented. See details below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiwumi-Assani et al. (US Patent 5,532,744) and Jones (US Patent 5,724,537).

Regarding claim 1, Akiwumi-Assani et al. disclose a decoding device for decoding a coded stream (Fig. 1 and Abstract), the device comprising: a plurality of decoding means for decoding the coded stream (Fig. 1 and Abstract); and decoding control means for controlling the plurality of decoding means to operate in parallel (Fig. 1; Abstract; column 5, lines 13-15).

However, Akiwumi-Assani et al. do not disclose storage means for storing values; detecting means for detecting when each stored value in the storage means are a first value; and selecting means for selecting picture data decoded by the decoding means for which the corresponding values stored in the storage means are a second value; wherein the value stored in the storage means corresponding to the decoding means which decoded the selected picture data are changed to the first value.

Jones discloses storage means for storing values (column 251, lines 13-40); detecting means for detecting when each stored value in the storage means are a first value (column 251, lines 13-40; column 249, lines 3-6; column 258, lines 13-22); and selecting means for selecting picture data decoded by the decoding means for which the corresponding values stored in the storage means are a second value (column 248, lines 61-65); wherein the value stored in the storage means corresponding to the decoding means which decoded the selected picture data are changed to the first value (column 249, lines 3-6).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the storage means disclosed by Jones into the decoding device disclosed by Akiwumi-Assani et al. to reuse memory resources. The incorporate feature would save the hardware cost of the device.

Regarding claim 3, Akiwumi-Assani et al. disclose: first buffer means for buffering the coded stream (column 5, lines 24-32); reading means for reading out a start code indicating the start of a predetermined information unit included in the coded stream from the coded stream (column 5, lines 5-12; lines 20-23) and reading out position information related to the position where the start coded is held to the first buffer means (column 5, lines 20-22, 35-38); second buffer means for buffering the start code and the position information read out by the reading means ("slice parser" in column 5, lines 35-38; "array in memory" in column 5, lines 22-23); and buffering control means for controlling the buffering of the coded stream by the first buffer means and the buffering

of the start code and the position information by the second buffer means ("system controller" in Fig. 1 and column 5, lines 20-23, 30-32).

Regarding claim 4, Akiwumi-Assani et al. anticipate the coded stream to be an MPEG2 coded stream prescribed by the ISO/IEC 13818-2 and ITU-T Recommendations H.262 (column 4, lines 16-20).

Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiwumi-Assani et al. (US Patent 5,532,744), Jones (US Patent 5,724,537), and Phillips et al. (US Patent 5,510,842).

Regarding claim 19, Akiwumi-Assani et al. disclose a decoding device for decoding a coded stream (Fig. 1 and Abstract), the device comprising: a plurality of slice decoders for decoding the coded stream (column 6, lines 46-49); and slice decoder control means for controlling the plurality of slice decoders to operate in parallel ("system controller" in Fig. 1; Abstract; column 5, lines 13-15).

However, Akiwumi-Assani et al. do not disclose storage means for storing values; selecting means for selecting predetermined picture data of a plurality of picture data decoded and outputted by the plurality of slice decoders; motion compensation means for receiving the picture data selected by the selecting step and performing motion compensation; and detecting means for detecting when each stored value in a storage means are a first value, selects picture data decoded by the decoding means for which the corresponding values stored in the storage means are a second value, and wherein the value stored in the storage means corresponding to the decoding means which decoded the selected picture data are changed to the first value.

Jones discloses storage means for storing values (column 251, lines 13-40); selecting means for selecting predetermined picture data of a plurality of picture data decoded and outputted by decoders (column 248, lines 61-65); detecting means for detecting when each stored value in the storage means are a first value (column 251, lines 13-40; column 249, lines 3-6; column 258, lines 13-22), selects picture data decoded for which the corresponding values stored in the storage means are a second value (column 248, lines 61-65), and wherein the value stored in the storage means corresponding to the decoding means which decoded the selected picture data are changed to the first value (column 249, lines 3-6).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the storage means disclosed by Jones into the decoding device disclosed by Akiwumi-Assani et al. to reuse memory resources. The incorporate feature would save the hardware cost of the device.

However, the proposed combination of Akiwumi-Assani et al. and Jones does not disclose motion compensation means for receiving the picture data selected by the selecting step and performing motion compensation, if necessary.

Phillips et al. discloses motion compensation means for receiving the picture data selected by the selecting means and performing motion compensation, if necessary ("motion compensation processors", in column 8, lines 11-67; column 9, lines 1-15).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the motion compensation means disclosed by Phillips et al. into the decoding device disclosed by Akiwumi-Assani et al. to decode video streams

of existing encoding standards such as MPEG, which uses motion compensation in encoding.

Regarding claim 20, it is rejected for the same reason as discussed in claim 19 above.

Regarding claim 21, it is rejected for the same reason as discussed in claim 19 above.

Claims 1, 5-7, and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon (EP 0720372 A1) and Jones (US Patent 5,724,537).

Regarding to claim 1, Kwon discloses a decoding device for decoding a coded stream (column 3, lines 2-5), the device comprising: a plurality of decoding means for decoding the coded stream (Fig. 4 and column 3, lines 18-21); and decoding control means for controlling the plurality of decoding means to operate in parallel ("Control 90" in Fig. 4).

However, Kwon does not disclose storage means for storing values; detecting means for detecting when each stored value in the storage means are a first value; and selecting means for selecting picture data decoded by the decoding means for which the corresponding values stored in the storage means are a second value; wherein the value stored in the storage means corresponding to the decoding means which decoded the selected picture data are changed to the first value.

Jones discloses storage means for storing values (column 251, lines 13-40); detecting means for detecting when each stored value in the storage means are a first value (column 251, lines 13-40; column 249, lines 3-6; column 258, lines 13-22); and

selecting means for selecting picture data decoded by the decoding means for which the corresponding values stored in the storage means are a second value (column 248, lines 61-65); wherein the value stored in the storage means corresponding to the decoding means which decoded the selected picture data are changed to the first value (column 249, lines 3-6).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the storage means disclosed by Jones into the decoding device disclosed by Kwon to reuse memory resources. The incorporate feature would save the hardware cost of the device.

Regarding to claim 5, Kwon discloses: selecting means for selecting predetermined picture data of a plurality of picture data decoded and outputted by the plurality of decoding means ("motion compensator" in column 7, lines 6-8); and motion compensation means for receiving the picture data selected by the selecting means and performing motion compensation ("motion compensator", "adder" in column 7, lines 6-16).

Regarding claim 6, see the discussion of claim 5 above. Furthermore, Jones also discloses the decoding means outputs an end signal indicating that decoding processing has ended to the selecting means (column 248, lines 61-65; column 249, lines 3-6); and wherein the selecting means has storage means for storing values corresponding to the respective processing statuses of the plurality of decoding means (column 251, lines 13-40), changes, from a first value to a second value, the values stored in the storage means corresponding to the decoding means outputting the end

signal indicating that decoding processing has ended (column 251, lines 13-40; column 248, lines 61-65), when all the values in the storage means are the first value, selects one of the picture data decoded by the decoding means for which the corresponding values stored in the storage means are the second value (column 251, lines 13-40; column 248, lines 61-65), and changes the value stored in the storage means corresponding to the decoding means which decoded the selected picture data, to the first value (column 249, lines 3-6).

Regarding to claim 7, Kwon discloses: a holding means for holding the picture data selected by the selecting means or the picture data on which motion compensation is performed by the motion compensation means ("frame memory 307" in Fig. 5 and in column 7, lines 6-9) ; and holding control means for controlling the holding, by the holding means, of the picture data selected by the selecting means or the picture data on which motion compensation is performed by the motion compensation means ("motion compensator 302" and "adder 306" in Fig. 5, column 7, lines 6-16).

Regarding claim 16, it is rejected for the same reason as discussed in claim 1 and 5 above.

Regarding claim 17, it is rejected for the same reason as discussed in claim 1 and 5 above.

Claims 1, 3, 5-8, and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips et al. (US Patent 5,510,842) and Jones (US Patent 5,724,537).

Regarding to claim 1, Phillips et al. disclose a decoding device for decoding a coded stream (column 2, lines 25-28), the device comprising: a plurality of decoding means for decoding the coded stream (column 2, lines 32-38; column 3, lines 36-38); and decoding control means for controlling the plurality of decoding means to operate in parallel ("Deformatter/Router 110" in Fig. 1; column 2, lines 29-32; column 45-52).

However, Phillips et al. do not disclose storage means for storing values; detecting means for detecting when each stored value in the storage means are a first value; and selecting means for selecting picture data decoded by the decoding means for which the corresponding values stored in the storage means are a second value; wherein the value stored in the storage means corresponding to the decoding means which decoded the selected picture data are changed to the first value.

Jones discloses storage means for storing values (column 251, lines 13-40); detecting means for detecting when each stored value in the storage means are a first value (column 251, lines 13-40; column 249, lines 3-6; column 258, lines 13-22); and selecting means for selecting picture data decoded by the decoding means for which the corresponding values stored in the storage means are a second value (column 248, lines 61-65); wherein the value stored in the storage means corresponding to the decoding means which decoded the selected picture data are changed to the first value (column 249, lines 3-6).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the storage means disclosed by Jones into the decoding

device disclosed by Phillips et al. to reuse memory resources. The incorporate feature would save the hardware cost of the device.

Regarding claim 3, Phillips et al. also disclose: first buffer means for buffering the coded stream ("32-bit Shift Register" in Fig. 2 of "Deformatter/Router" in column 3, lines 42-48); reading means for reading out a start code indicating the start of a predetermined information unit included in the coded stream from the coded stream ("start code detector" in Fig. 2; column 5, lines 46-60) and reading out position information related to the position where the start coded is held to the first buffer means (column 5, lines 54-65); second buffer means for buffering the start code and the position information read out by the reading means ("decoders" in column 5, lines 54-65); and buffering control means for controlling the buffering of the coded stream by the first buffer means and the buffering of the start code and the position information by the second buffer means ("8-1 Multiplexer 210" and "Start Code Detector" in Fig. 2; and "Deformatter/Router 110" of Fig. 1; column 5, lines 54-65).

Regarding to claim 5, Phillips et al. also discloses: selecting means for selecting predetermined picture data of a plurality of picture data decoded and outputted by the plurality of decoding means ("motion compensation processors" in column 7, lines 7-11); and motion compensation means for receiving the picture data selected by the selecting means and performing motion compensation ("motion compensation processors", in column 8, lines 11-67; column 9, lines 1-15).

Regarding claim 6, see the discussion of claim 5 above. Furthermore, Jones also discloses the decoding means outputs an end signal indicating that decoding

processing has ended to the selecting means (column 248, lines 61-65; column 249, lines 3-6); and wherein the selecting means has storage means for storing values corresponding to the respective processing statuses of the plurality of decoding means (column 251, lines 13-40), changes, from a first value to a second value, the values stored in the storage means corresponding to the decoding means outputting the end signal indicating that decoding processing has ended (column 251, lines 13-40; column 248, lines 61-65), when all the values in the storage means are the first value, selects one of the picture data decoded by the decoding means for which the corresponding values stored in the storage means are the second value (column 251, lines 13-40; column 248, lines 61-65), and changes the value stored in the storage means corresponding to the decoding means which decoded the selected picture data, to the first value (column 249, lines 3-6).

Regarding to claim 7, Phillips et al. also discloses: a holding means for holding the picture data selected by the selecting means or the picture data on which motion compensation is performed by the motion compensation means ("MC Memory A", "MC Memory B", "FIFOs" in Fig. 6; column 8, lines 11-67; column 9, lines 1-15) ; and holding control means for controlling the holding, by the holding means, of the picture data selected by the selecting means or the picture data on which motion compensation is performed by the motion compensation means ("Data-path Controller 626" in Fig. 6; column 9, lines 7-10).

Regarding to claim 8, Phillips et al. also discloses the holding means separately holds a luminance component and color-difference components of the picture data (Fig. 5; column 6, lines 56-65; column 8, lines 16-19).

Regarding claim 14, Phillips et al. also discloses the output means for reading and outputting the picture data held by the holding means ("Interpolation Filter 118 and raster converter 120" in Fig. 1, column 3, lines 35-41); wherein the decoding means is capable of decoding the coded stream at a speed of N times the processing speed necessary for normal reproduction (with N = 1 in column 3, lines 35-41); and the output means is capable of outputting the picture data of N frames each, of the picture data held by the holding means (with N = 1 in column 3, lines 38-41).

Regarding claim 15, it is rejected for the same reason as discussed in claims 1, 3, 5, and 7 above.

Regarding claim 16, it is rejected for the same reason as discussed in claim 1 and 5 above.

Regarding claim 17, it is rejected for the same reason as discussed in claim 1 and 5 above.

Claims 2, 23-24, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiwumi-Assani et al. (US Patent 5,532,744) and Jones (US Patent 5,724,537) as applied to claims 1 and 3-4 above, and further in view of Allen et al. (US Patent 5,381,145).

Regarding claim 2, see the teachings of Akiwumi-Assani et al. and Jones as discussed in claim 1 above. However, the proposed combination of Akiwumi-Assani et

al. and Jones does not teach the plurality of decoding means to output a signal indicating the end of decoding processing to the decoding control means, and the decoding control means to control the decoding means which outputted the signal indicating the end of decoding processing, to decode the coded stream.

Allen et al. teach the plurality of decoding means to output a signal indicating the end of decoding processing to the decoding control means ("feedback signal" in column 5, lines 56-63), and the decoding control means to control the decoding means which outputted the signal indicating the end of decoding processing, to decode the coded stream (column 5, lines 64-68; column 6, line 1).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the use of the feedback signal taught by Allen et al. into the decoding device taught by Akiwumi-Assani et al. and Jones to increase the bandwidth by reducing the idle time of individual components.

Regarding claim 23, Akiwumi-Assani et al. also disclose a decoding device for decoding a source coded stream (Fig. 1 and Abstract), the device comprising: a plurality of slice decoders for decoding the source coded stream for each slice constituting a picture of the source coded stream (column 6, lines 46-49); and control means for controlling the plurality of slice decoders ("system controller" in Fig. 1; Abstract; column 5, lines 13-15);

However, the proposed combination of Akiwumi-Assani et al. and Jones does not disclose: the control means for monitoring the statuses of the plurality of the slice decoders; and wherein the control means allocates the slices to the plurality of slice

decoders so as to realize the fastest decoding processing of the picture by the slice decoders irrespective of the order of the slices included in the picture.

Allen et al. disclose a method and apparatus for encoding and decoding data in parallel, in which the control means for monitoring the statuses of the plurality of the slice decoders (by reading the "feedback signals" in column 5, lines 56-63); and wherein the control means allocates the slices to the plurality of slice decoders so as to realize the fastest decoding processing of the picture by the slice decoders irrespective of the order of the slices included in the picture (allocating slices to decoder based upon reading the "feedback signals" only in column 5, lines 56-63).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the use of the feedback signal to monitor the statuses of the decoders taught by Allen et al. into the control means taught by Akiwumi-Assani et al. and Jones to increase the bandwidth by reducing the idle time of individual components.

Claim 24 is rejected for the same reason as discussed in claim 23 above.

Regarding claim 26, see the discussion of claim 2 above. Additionally, Allen et al. also disclose the control means allocating the slice to be decoded to the slice decoder which ended decoding (column 5, lines 56-63).

Claim 27 is rejected for the same reason as discussed in claim 26 above.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips et al. (US Patent 5,510,842) and Jones (US Patent 5,724,537) as applied to

claims 1, 3, 5-8, and 14-17 above, and further in view of Iwamura et al. (US Patent (5,715,354).

Regarding claim 9, see the teachings of Phillips et al. and Jones as discussed in claim 1 above. Additionally, Phillips et al. also teach the change means for changing the order of frames of the coded stream supplied to the decoding means ("motion compensation processors 116" in Fig. 1; column 7, lines 52-57). However, the proposed combination of Phillips et al. and Jones does not teach that the holding means can hold at least two more frames than the number of frames obtained by totaling intra-coded frames and forward predictive coded frames within a picture sequence, and the change means can change the order of frames of the coded stream so as to make a predetermined order for reverse reproduction of the coded stream.

Iwamura et al. teach the use of a ring buffer for storing image data in terms of one GOP, the total frames of which would be greater than two plus total number of the intra-coded frame and forward predictive frames (see Fig. 4B) and when reverse reproduction is demanded, can be read in predetermined reverse order (Fig. 5F; column 7, lines 7-12).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the concept of using the ring buffer for data reverse reproduction taught by Iwamura et al. into the decoding device taught by Phillips et al. and Jones to provide a user-friendly device by implementing the reverse playback feature.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips et al. (US Patent 5,510,842), Jones (US Patent 5,724,537), and Iwamura et al. (US Patent 5,715,354) as applied to claims 1, 3, 5-9, and 14-17 above, and further in view of Toebes, VIII et al. (US Patent 5,959,690).

Regarding claim 10, see the teachings of Phillips et al., Jones, and Iwamura et al. as discussed in claim 9 above. Phillips et al. also teach the output means for reading and outputting the picture data held by the holding means ("Interpolation Filter 118 and raster converter 120" in Fig. 1, column 3, lines 35-41). However, the proposed combination of Phillips et al., Jones, and Iwamura et al. does not teach the predetermined order being an order of intra-coded frame, forward predictive coded frames, and bidirectional predictive coded frames, the order within which is the reverse of the coding order; and the output means sequentially reads out and outputs the bidirectional predictive coded frames decoded by the decoding means and held by the holding means, and reads out the intra-coded frame or the forward predictive coded frame held by the holding means, at predetermined timing, and inserts and outputs the intra-coded frame or the forward predictive coded frame at a predetermined position between the bidirectional predictive coded frames.

Toebes, VIII et al. teach the predetermined order being an order of intra-coded frame, forward predictive coded frames, and bidirectional predictive coded frames, the order within which is the reverse of the coding order (column 17, lines 39-67; column 18, lines 1-19); and the output means sequentially reads out and outputs the bidirectional predictive coded frames decoded by the decoding means and held by the

holding means, and reads out the intra-coded frame or the forward predictive coded frame held by the holding means, at predetermined timing, and inserts and outputs the intra-coded frame or the forward predictive coded frame at a predetermined position between the bidirectional predictive coded frames (column 17, lines 39-67; column 18, lines 1-19).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the method of reverse decoding and reproduction taught by Toebes, VIII et al. into the decoding device taught by Phillips et al., Jones, and Iwamura et al. to provide the feature of reverse playback without loss of temporal resolution (column 7, lines 1-4).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips et al. (US Patent 5,510,842), Jones (US Patent 5,724,537), Iwamura et al. (US Patent 5,715,354), and Toebes, VIII et al. (US Patent 5,959,690) as applied to claims 1, 3, 5-10, and 14-17 above, and further in view of Comer (US Patent 6,201,927).

Regarding claim 11, see the teachings of Phillips et al., Jones, Iwamura et al., and Toebes, VIII et al. as discussed in claim 10 above. However, the proposed combination of Phillips et al., Jones, Iwamura et al., and Toebes, VIII et al. does not teach the predetermined order is such an order that an intra-coded frame or a forward predictive coded frame of the previous picture sequence decoded by the decoding means is held by the holding means at the timing when the intra-coded frame or the forward predictive coded frame is outputted by the output means.

Comer teaches the predetermined order is such an order that an intra-coded frame or a forward predictive coded frame of the previous picture sequence decoded by the decoding means is held by the holding means at the timing when the intra-coded frame or the forward predictive coded frame is outputted by the output means (Fig. 2; column 3, lines 14-46).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the order in which the intra-coded frame is displayed while the intra-coded frame of previous sequence is kept in memory taught by Comer et al. into the decoding device taught by Phillips et al., Jones, Iwamura et al. and Toebes, VIII et al. to implement the reverse display when the sequence of display goes across the boundary of the picture sequences.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips et al. (US Patent 5,510,842), Jones (US Patent 5,724,537), and Iwamura et al. (US Patent 5,715,354) as applied to claims 1, 3, 5-9, and 14-17 above, and further in view of Schipper (US Patent 6,341,193).

Regarding claim 12, see the teachings of Phillips et al., Jones, and Iwamura et al. as discussed in claim 9 above. Phillips et al. additionally teach, as MPEG standard, necessary information for decoding the coded stream, wherein the coded stream includes the information (column 3, lines 53-67; column 4); and control means for controlling the supply of the information to the decoding means ("detector" in column 5, lines 46-52); and the control means selects the necessary information for decoding

processing by the decoding means and supplies the necessary information to the decoding means (column 5, lines 46-52).

However, the proposed combination of Phillips et al., Jones, and Iwamura et al. does not teach the recording means for recording the necessary information and control means for controlling the recording of the information by the recording means.

Schipper teaches the recording means for recording MPEG stream, which includes the necessary information for decoding the stream (Fig. 1; column 2, lines 39-40); and control means for controlling the recording of the information by the recording means ("signal processing unit" in Fig. 1).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the recording means and control means taught by Schipper into the decoding device taught by Phillips et al., Jones, and Iwamura et al. to provide a user-friendly interface to the device by having the feature of recording.

Regarding claim 13, Phillips et al. also teach the information supplied to the decoding means by the control means is an upper layer coding parameter corresponding to a frame decoded by the decoding means (column 5, lines 46-53).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Q. Dang whose telephone number is 571-270-1116. The examiner can normally be reached on M-Th:7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thai Tran can be reached on 571-272-7382. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hung Dang
Patent Examiner